

ABSTRACT OF THE DISCLOSURE

A surface measuring apparatus for measuring a surface shape of an element includes a measurement frame having a mount for mounting the element to be measured, a stage including a rotatable device, the stage being movable in at least a first direction relative to the measurement frame, and a contactless distance measurement device for measuring in the first direction a distance between the measurement frame and a predetermined measurement surface provided on the rotatable device. The apparatus further comprises a second distance measurement device for measuring in a second direction a second distance between the device and a selected position on a surface of an element mounted relative to the measurement frame and a rotation measurement device for measuring an angle of rotation between the first and second direction. In this way, aspheric or free-form surfaces of optical elements can be measured easily in closed loop without introducing abbe-errors.